



UNITED STATES MARINE CORPS

3D MARINE DIVISION (-) (REIN), FMF
UNIT 35801
FPO AP 98602-5801

DivO P5100.2A
G-4/SAFETY
29 MAY 92

DIVISION ORDER P5100.2A

From: Commanding General
To: Distribution List

Subj: STANDING OPERATING PROCEDURES FOR CHEMICAL AGENT RESISTANT
COATING (CARC) (SHORT TITLE: SOP FOR CARC)

Ref: (a) TM 4750-15/1
(b) OPNAVINST 5100.23B
(c) ANSI Z-358.1-1981

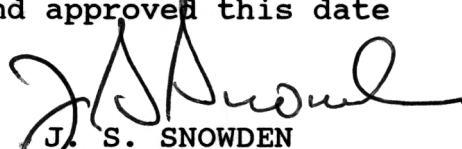
Encl: (1) LOCATOR SHEET

1. Purpose. To establish within the 3d Marine Division standard procedures for the safe use of Chemical Agent Resistant Coating (CARC) equipment maintenance and to establish supervisory responsibilities for the implementation of these procedures within the guidelines of references (a) thru (c).
2. Cancellation. DivO P5100.2
3. Information. This Manual amplifies, where necessary, directives from higher authority and delineates the policies of this Headquarters.
4. Action. The storage, use and disposal of CARC paint by all organizations within and under the operational control of 3d Marine Division will be per the policies and procedures set forth herein.
5. Recommendation. Recommendations concerning the contents of this SOP for CARC are invited. Such recommendations will be forwarded to this Headquarters (Attn: SafetyO) via the appropriate chain of command.

DivO P5100.2A

29 MAY 92

6. Certification. Reviewed and approved this date



J. S. SNOWDEN
Chief of Staff

DISTRIBUTION: A/D

Copy to: CMC (MHS-1)
CG, III MEF (AC/S G-4)
CG, MCB Camp Butler (Base Safety)
CO, NRMC Okinawa (Industrial Hygiene/Environmental
Health)

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Location: _____
(Indicate the location(s) of copy(ies) of this Manual.)

ENCLOSURE (1)

SOP FOR CARC

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change

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CHAPTER 1

GENERAL INFORMATION/RESPONSIBILITIES

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CHAPTER 1

GENERAL INFORMATION/RESPONSIBILITIES

1000. PURPOSE. The purpose of this Chapter is to set forth the concepts and responsibilities for application of CARC within 3d Marine Division.

1001. BACKGROUND. Beginning in 1986 the Marine Corps began the transition from the use of alkyd enamels and lacquers to Chemical Agent Resistant Coating (CARC) for the surface protection of vehicles and equipment. This change was initiated for two reasons.

1. CARC is significantly more durable than alkyd paints and can provide surface protection for two years if properly applied and cured. This will minimize the amount of paint required to accomplish touch-up painting at the unit level.

2. CARC does not absorb chemical or biological agents and, unlike alkyd enamels and lacquers, allows the use of decontamination solutions without damaging the coating. This simplifies decontamination and reduces deadline of equipment due to the decontamination process.

1002. PROGRAM POLICY. The Division CARC Program is implemented and supervised by the Commanding General. The program is conducted per the provisions of references (a) through (c) and is applicable to all personnel assigned to the 3d Marine Division. The material protection against corrosion and possible chemical or biological contamination of our equipment is an inherent responsibility of command. Additionally, the safe employment of protective measures such as personal protective equipment when applying CARC is also an inherent responsibility of command. Therefore this program shall be implemented throughout the chain of command. There will be only one CARC touch up site per camp for coordinated use by all division units.

1003. PROGRAM OBJECTIVES. The objectives of the Division CARC Program are the safe and effective application of CARC to the division's equipment and the prevention of personnel injury or environmental damage by improper CARC use. These objectives ensure the combat readiness of equipment and the personal safety of our Marines.

1004. PROGRAM SCOPE. The Division CARC Program is comprehensive in nature. It is designed to provide maximum protection of equipment while reducing to an absolute minimum the potential for personnel injury or environmental damage resulting from improper

CARC use. The program covers requisition, use, storage, waste disposal and medical surveillance requirements.

1005. RESPONSIBILITIES. It is the inherent responsibility of commanders to ensure that their personnel are adequately safeguarded from unnecessary harm while simultaneously ensuring that their assigned equipment is protected and properly maintained. To this end each commander must establish and or enforce safe practices and training programs/standards for every aspect of his/her unit's use of CARC.

1006. ORGANIZATION. Commanders at the following designated levels will appoint suitable personnel to administer the Division CARC Program. These personnel will be guided by TM 4750-15/1, DivO P5100.11, the unit SOP and the provisions of this SOP in matters pertaining to CARC painting.

1. Division Ground Safety Officer (Manager). The Division Ground Safety Officer is a special staff officer under the staff cognizance of the Division Assistant Chief of Staff G-4. Inherent in his supervision of the Division Ground Safety Program is the responsibility to coordinate the management of the Division CARC Program. The Division Ground Safety Officer's duties in this regard shall include, but not be limited to, the following:

a. Implement, coordinate and supervise the Division CARC Safety Program per current directives.

b. Establish and maintain liaison with the Safety Manager, MCB Camp Butler, the Environmental Health Section/Industrial Hygiene Branch at U. S. Naval Hospital Okinawa and other agencies as appropriate.

c. Establish and maintain liaison with all cognizant Staff Officers and unit Ground Safety Officers.

d. Adapt safety and CARC application directives, regulations and suggestions from higher authority for local conditions.

e. Conduct periodic inspections of personnel records and facilities used in the application and storage of CARC by division personnel. Review operating and training instructions and recommend corrective actions, as necessary, in order to eliminate unsafe conditions or procedures.

f. Provide for indoctrination and training for all unit Ground Safety Officers and their assistants regarding CARC.

g. Investigate CARC related accidents/spills. Ascertain unsafe work conditions or hazards and recommend corrective measures to eliminate accident causes.

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h. Develop an inspection checklist for CARC safety for inclusion in DivO P5100.11.

i. The following are certified CARC sites:

- (1 Headquarters Battalion, Camp Courtney
- (2) Armored Assault Battalion, Camp Schwab
- (3) Twelfth Marine Regiment, Camp Foster
- (4) 3d Combat Engineer Battalion, Camp Hansen

2. Unit Maintenance Supervisors. All unit maintenance supervisors will accomplish CARC-related equipment maintenance per the safety procedures set forth in TM 4750-15/1 and this SOP. They are responsible for supervising the actual application of CARC in a safe and effective manner. They will ensure that all necessary safety equipment is in position, all necessary training conducted and all medical surveillance requirements met prior to allowing their designated personnel to apply CARC.

1007. UNIT SOP AND OPERATING MANUALS

1. This Manual shall double as the unit SOP and operating Manual when the following are appended to this directive:

- a. List of personnel on the Medical Surveillance Program
- b. Letter from Industrial Hygiene Branch certifying CARC application site.
- c. List of safety equipment on-hand.
- d. Roster of personnel engaged in CARC application.
- e. List of authorized materials.
- f. Diagram of CARC site.
- g. Units requesting certification of a CARC site will submit in writing via the Commanding General, 3d Marine Division, (Attn G-4 Safety) per example:

From: Commanding Officer, _____
To : Commanding Officer, US Naval Hospital (Attn
Industrial Hygiene Branch)

Subj: _____

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CHAPTER 2

SAFETY PROCEDURES

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CHAPTER 2

SAFETY PROCEDURES

2000. GENERAL. While the application of CARC is no more inherently dangerous than numerous other routine maintenance activities undertaken by our Marines, commanders and maintenance personnel must be aware that there is a potential for hazardous exposure. Therefore all commanding officers, their staffs and maintenance supervisors must monitor CARC application for safety.

2001. HAZARDOUS COMPONENT. The hazardous component of CARC is hexamethylene diisocyanate (HDI). HDI can cause an allergic response in individuals sensitive to it. Additionally, once sensitized by an initial overexposure, an asthmatic condition may develop which can be initiated by very small subsequent exposures. This hazard exists only during the application and curing of CARC or during welding of CARC painted surfaces. It must be emphasized that once CARC is fully cured no further health hazard remains. The symptoms of hazardous overexposure to CARC are as follows:

1. Acute Effects. (Acute effect is defined as usually immediate upon exposure, brief, possibly severe, disappears when individual is removed from effected environment.)

- a. Burning and watering of eyes.
- b. Burning sensation in nose and throat.
- c. Sore throat
- d. Coughing.
- e. Reddening and itching of skin.

2. Chronic Effects. (Chronic effect is defined as usually resulting from long term exposure, long duration effect, may remain after removal from environment.)

- a. Decrease in pulmonary function.
- b. Pulmonary edema.
- c. Liver abnormality
- d. Central nervous disorders
- e. Blood protein abnormality

3. Sensitization. (Subsequent exposure to even small amounts after initial overexposure.)

- a. Coughing
- b. Wheezing
- c. Tightness of chest.
- d. Shortness of breath

4. Prevention. It cannot be overemphasized that the use of approved personal protective equipment and normal safety precautions totally precludes exposure to HDI which could result in the previous symptoms.

5. First Aid. Appendix A lists basic first aid procedures for overexposure to HDI. These first aid procedures will be prominently posted at every CARC spot painting site. Additionally, they will be included in the training program for designated users of CARC.

2002. REQUIREMENT FOR MEDICAL SURVEILLANCE. Reference (a) states that personnel normally performing only touch-up CARC painting do not require medical surveillance. However, reference (a) states that the manual mixing/stirring of CARC requires the use of an organic vapor cartridge respirator. Therefore, CARC painters will be required to participate in their unit's command Respirator Protection Program (RPP). If there is no RPP in effect then one must be established per reference (b). Additionally, the intent of this SOP is to limit touch-up CARC painting to specifically trained personnel only. Consequently, it is important to screen those individuals who will have a routine exposure to CARC. Appendix B delineates procedures from reference (b) for a preplacement physical for personnel who will be designated and trained for touch-up CARC painting. The procedures for establishing a medical surveillance program are as follows.

1. Designate Personnel. The unit Ground Safety Officer, in coordination with unit maintenance supervisors, will determine the number of personnel required to perform equipment maintenance with CARC. This should be based on equipment density, anticipated number of touch-up sites to be certified at that camp and the one quart per day per man restriction on CARC exposure.

2. Request Medical Screening. The unit Ground Safety Officer, using the format given in appendix B, will forward a request for medical screening and inclusion on the unit RPP for personnel handling CARC. It is the responsibility of the unit Ground Safety Officer to establish liaison for medical examinations and ensure that designated personnel report to the Medical Surveillance Branch, Bldg 6044, Camp Lester (ext 634-0866) with their medical records.

2003. PERSONAL PROTECTION EQUIPMENT. Appendix C lists current NSNs for personal protection equipment (PPE) required during CARC spot painting.

1. Respiratory Protection

a. During manual mixing and touch-up painting, in a well-ventilated area, an organic vapor (OV) respirator will be worn. Reference (a) recommends the use of an OV respirator with a silicone facepiece for ease of cleaning and comfort. Silicone facepiece OV respirators are available through open-purchase.

b. A standard dust respirator will be worn during sanding and abrading a CARC painted surface.

2. Skin Protection

a. Coveralls or disposable paper Tyvek suits will be worn during mixing or application.

b. Butyl rubber or silicone gloves will be worn when handling CARC. Additionally, barrier cream will be employed in conjunction with the gloves to counteract the defatting (dangerously excessive drying of the natural skin oils) by contact with solvents. Barrier creams must not be used as a substitute for gloves.

3. Eye/Face

a. Splash goggles and a full face shield will be worn when mixing or applying CARC.

b. Safety goggles and a full face shield will be worn when sanding or abrading a CARC surface.

2004. CARC SPOT PAINTING FACILITIES REQUIREMENTS

1. Ventilation. CARC specified in this SOP are volatile organic compound (VOC) compliant and may be applied by brush indoors or outdoors without air pollution devices (such as air scrubbers/filters), provided the activity is conducted in a suitably ventilated area. A suitably ventilated area is defined in reference (a) as having a ceiling at least 16 feet in height and open to air circulation in at least three directions. Most unit maintenance bays meet this requirement. But, it is highly recommended that an outdoors facility be used.

2. Eye Wash Stations. Emergency eye wash stations meeting the specifications of reference (c) must be available at each CARC touch-up painting facility. Basically, this consists of a permanent or portable eye wash station that has a 15 minute duration and is within ten seconds travel distance of the CARC painting site.

The porta-stream eyewash station listed in appendix C is recommended for those sites lacking plumbing.

3. Buffer Zone. The designated CARC painting site shall have a 15 foot buffer zone around the equipment spot roped off and a sign posted during painting operations bearing the following bilingual warning in Japanese and English.

"WARNING
CARC PAINT USED IN THIS AREA
AUTHORIZED PERSONNEL ONLY"

警告
化学反応性ペンキ使用地域に付き
許可者以外の立入りを禁ず

4. Storage. CARC should be stored in a cool, dry, well-ventilated location in order to minimize degradation of the material. BO 11320.4 gives guidelines on paint storage. CARC storage guidelines are as follows:

a. Shelf Life. CARC has a minimum shelf life of one year when stored in full, tightly sealed containers below 122 degrees F/50 degrees C. CARC which is no longer usable will require disposal as hazardous waste.

b. Pressurization. Since HDI is hydroscopic, moisture entry into a partially closed container will cause pressure build-up and production of carbon dioxide. Carbon dioxide can cause a sealed container to burst. Containers must be tightly and completely sealed.

c. Pot Life. Once mixed, CARC has a pot life of about eight hours at 70–75 degrees F/22–24 degrees C. However, exposure to temperatures approaching 100 degrees F/38 degrees C decreases the pot life to two hours.

d. Curing. CARC paint chemically cures in reaction with moisture in the atmosphere. Once a container is opened the curing process begins. Material left in a partially filled re-closed container will "skin". Within a period of a few days the "skin" may be removed (and disposed of as hazardous waste) and the CARC re-stirred for further application. If the material in a partially used and re-closed container is not used within a week, the skinning or curing may progress to a depth where the CARC cannot be used.

e. Material Safety Data Sheets (MSDS). MSDS should be obtained for all CARC related items and posted prominently on all storage/issue points and at the entrance to the CARC painting area. While MSDS are normally enclosed with these items, Safety Officers should ensure that they are obtained from the supplier and provided to users. Questions regarding MSDS may be directed to the Division Safety Office, ext 622-9519/9517.

5. CARC Site Certification. Reference (a) requires that CARC painting facilities be evaluated by appropriate Industrial Hygiene Branch inspectors prior to commencing operation and at least annually thereafter. Appendix D provides the format and information necessary to request site certification. Ground Safety Officers are reminded that all medical screening must be accomplished, all necessary safety equipment must be on hand and all necessary facilities modifications accomplished prior to requesting certification of CARC spot painting facilities.

2005. CARC SPILL/LEAKAGE PROCEDURES. All personnel handling CARC paint must be thoroughly familiar with response procedures for spills or leakage. Appendix E will be prominently posted at each certified CARC paint site.

2006. HAZARDOUS MATERIAL/HAZARDOUS WASTE (HM/HW). BO 6280.2B provides guidance for the handling, storage, transportation and turn-in of HM/HW by Marine Corps units to the Defense Reutilization and Marketing Office (DRMO) for disposal. The use, storage and disposal of CARC-related HM/HW can be accommodated by existing programs. The following procedures will be utilized.

1. Storage. The segregation of HM/HW is important both from safety and disposal standpoints. Mixtures of incompatible wastes can be highly reactive, cause injury to personnel, and the waste may be much more difficult to dispose of. For planning purposes of this SOP, Hazardous Material can be best defined as excess CARC paint that has an expired shelf life or is otherwise unusable. Hazardous Waste is best defined as CARC paint residue from opened containers, thinner or cleaning material used in clean-up actions after CARC painting or a spill/leakage. HM/HW containers should be marked as shown in Appendix F. While Ground Safety Officers should review BO 6280.2B, the following general storage guidelines are provided:

a. General Requirements

(1) Each generating activity shall designate a HW accumulation area and have this area conform to the requirements of BO 6280.2B. A separate HW accumulation area for CARC items is not necessary if existing HW accumulation areas meet the requirements of BO 6280.2B.

(2) Hazardous wastes must be collected and containerized immediately after they are generated. In general, this means that an appropriate Department of Transportation (DOT) approved container with label and associated paperwork must be maintained on a daily basis. Each generating activity must maintain an adequate number of containers to accommodate routine collection of HW. A sample hazardous waste container label is shown in appendix F.

(3) Unopened containers of unused hazardous materials which are no longer needed by a generating activity shall be turned into the unit Supply Section for possible use by other Marine Corps activities. For HM which cannot be reused, the Supply section shall turn in the material to DRMO for sale or disposal.

(4) Containers used for HW collection must be DOT approved, always closed except when necessary to add or remove waste, in good condition, have no dents or corrosion, closure rings or bungs that are tightly fitted, made of or lined with a material which will not react with and is otherwise compatible with the HW it will be used for, and opened, closed, and handled in a manner to prevent rupture or leakage of the containers.

(5) Empty one quart CARC paint cans must be decontaminated with thinner prior to their disposal.

b. Storage Requirements. Accumulation areas must comply with the following standards:

(1) Physical separation of incompatible wastes, must be maintained at all times by either a curb or other means necessary to prevent the mixing of these wastes due to a spill or accidental addition while collecting the waste. BO 6280.2B outlines those incompatible materials which should never be mixed and identifies some of the hazards that mixing would create. Another reference to use to determine the incompatibility of materials is the document "A Method for Determining the Compatibility of Hazardous Wastes, EPA/600/2-80-076".

(2) Adequate spill control/containment material must be on hand to contain and/or clean-up a spill as instructed in BO 11000.5E.

(3) The accumulation area, including all containers of HW, safety equipment, and spill control materials, shall be inspected weekly by the unit Ground Safety Officer. Inspections shall be recorded and problems noted in the inspection corrected immediately

(4) A bilingual sign shall be posted at the entrance of the accumulation area in a size that will be legible for the distance of 25 feet, reading:

"DANGER UNAUTHORIZED PERSONNEL KEEP OUT"

In addition, a "NO SMOKING WITHIN 50 FEET" sign shall be placed at the entrance of the CARC paint site.

(5) Containers of HW shall be placed on pallets. Each drum shall be positioned so that the HW label is clearly visible. Sufficient aisle space shall be maintained around the container (or pallet) to allow unobstructed movement of personnel, spill control, and decontamination equipment.

2. Disposal. Leaking or damaged containers of HW will be repackaged into a DOT 17E recovery drum or contents placed into another container, whichever is more appropriate. The drum must be marked and labeled as appropriate for the hazardous waste.

a. Containers. The turn-in of all HM/HW must be in containers which are non-leaking, safe to handle and not over-filled. For HM/HW liquids there must be a minimum of 4-6 inches air space in a 55 gallon drum.

b. Markings. Markings on containers must be obliterated and the current contents indicated by a paint stencil or other marking, as well as the label example in appendix F. The following guidance is provided:

<u>Hazard HM/HW</u>	<u>Lable Class</u>	<u>Required</u>	<u>Packaging</u>
paint or LIQUID	COMBUSTIBLE LIQUID	FLAMMABLE	55 gallon drum original container
paint or thinner container LIQUID	FLAMMABLE LIQUID	FLAMMABLE COMBUSTIBLE	55 gallon drum original
paint, or waste container	FLAMMABLE LIQUID	FLAMMABLE LIQUID	55 gallon drum original

Note: For specific guidance on marking contact the nearest HW Staging Facility.

c. Procedure. The unit turning in HM/HW will deliver the properly packaged substance to the nearest Staging Facility during the normal hours of operation. Accompanying the HM/HW will be a complete DD Form 1348-1 for each different HM/HW. Instructions for completing DD Form 1348-1 are contained in appendix G. The following guidance for turn-in of HM/HW is provided.

(1) Staging Facility personnel will sign and date the DD Form 1348-1 and return the last copy to the unit representative turning in the HM/HW. All six copies of DD Form 1348-1 are needed to turn-in HM/HW.

(2) The unit delivering the HM/HW will unload and place the containers in locations as directed by the Staging Facility personnel. Material handling equipment may not always be available, therefore it is strongly recommended that containers not exceed a weight where they can be safely manhandled by Marines.

(3) Units not able to turn in HM/HW at normal working hours may request special scheduling from the Base Environmental Engineer at extension 635-3144.

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CHAPTER 3

APPLICATION PROCEDURES

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CHAPTER 3

APPLICATION PROCEDURES

3000. GENERAL. Within 3d Marine Division the only authorized application of CARC will be "touch-up" brush painting. Use of spray guns is strictly prohibited due to the lack of OSHA - approved spray painting booths. Touch-up painting is defined as the brush painting of small surface areas where rust, corrosion, or damage to the surface requires a reapplication of CARC in order to prevent deterioration. The painting of vehicles and equipment for cosmetic purposes such as parades or inspections is expressly forbidden. Total repainting of vehicles, or that amount of painting that would require a spray gun is authorized only at the designated Intermediate Maintenance Activity operated by 3d FSSG. The use of CARC for touch-up painting will be limited to one quart per man per day. No more than one person at a time shall apply CARC to a vehicle.

3001. AUTHORIZED CARC. CARC is manufactured in a large number of Military Specifications to meet a wide range of painting and environmental safety requirements. As policy, this command will requisition and use only single component CARC MIL-C-53039 in one quart cans for touch-up painting. Double component CARC will not be requisitioned or applied by this command due to its mixing requirements, large volume per unit/issue and required spray gun application. Prior to requesting certification of their CARC spot painting sites, all units will review tables 2-1 through 2-7 and appendix E of reference (a) to determine the military specification and NSN of the CARC required to support their equipment. A list including military specifications, colors and NSN of all CARC related items to be requisitioned in support of spot painting will be forwarded by each unit via the chain of command to this Headquarters (G-4/SafetyO) for review.

3002. CARC CHARACTERISTICS

1. Curing

a. Epoxy primers need not be fully cured prior to application of a top coating. Primers generally dry to touch within 30 minutes to an hour depending on conditions; dry hard in four hours and completely cure in seven days.

b. Curing time increases with lower temperatures or lower humidity.

2. Adhesion. Adhesion is effected by high humidity, very high or low temperatures or the presence of contaminants such as sanding grit, corrosion, debris, carbon deposits, grease, wax, fluid, water or fingerprints. Paint failures will result if the surface is not adequately cleaned before painting.

3. Storage life. CARC coating/primers all have a minimum shelf life of one year when stored below 122 degrees F/50 degrees C.

3003. SURFACE PREPARATION/APPLICATION PROCEDURES. Surface preparation and application of CARC will be per chapter 2 of reference (a). Preparation and touch-up painting procedures are as follow for the indicated surfaces.

1. Previously painted metal surfaces. CARC may be applied over any of the following surfaces.

a. Previously painted aklyd painted surfaces provided the coating is sound and no corrosion exists. CARC will adhere only to a scuff-sanded, properly cleaned, adequately cured (90 days) aklyd surface which has not absorbed contaminates such as petroleum products, synthetic hydraulic/transmission fluids and antifreeze. Contaminated surfaces must be scuff-sanded prior to application.

b. CARC may be applied over CARC that has been properly cured, cleaned, and scuff-sanded.

2. Sanding/cleaning. Solvent clean the area that contains oil, grease, or other contaminants with MIL-T-81772 thinner. Sanding of any type should also be followed by wiping down the exposed area with MIL-T-81772 to remove all loose debris, grease, oil (including fingerprints) and diesel/gasoline residue. The surface to be spot painted is then wiped down with a clean/dry rag to ensure removal of all moisture.

3. Stripping. Any coating showing extreme corrosion, cracking or blistering must be sanded down to bare metal then cleaned and treated as bare metal. Because of the extensive preparations and equipment needed to completely sandblast, chemically strip, clean, prime, and apply CARC to such surfaces these actions will be undertaken only at the Intermediate Maintenance Activity (IMA). Touch-up painting at the organizational level should involve only scuff sanding and cleaning contaminated surfaces.

4. Wood surfaces. Clean wood surfaces of all dirt, oil, grease, or other contaminants. Wood must be dry prior to CARC application.

5. Fiberglass surfaces. Fiberglass surfaces must be free of all dirt, oil, grease, or other contaminants. The surface should be abraded/scuff sanded prior to CARC application so the coating will adhere.

6. Prohibited surfaces. CARC should not be applied to the following surfaces:

a. Rubber products, cloth or glass.

b. Items subject to temperatures in excess of 400 degrees F/240 degrees C. such as manifolds, exhaust pipes, turbo chargers, mufflers or similar items.

c. Lacquer painted surfaces.

3004. CLEAN-UP PROCEDURES. Brushes used for CARC application may be cleaned with solvent and reused. These brushes should be stored separately to prevent contamination by other coatings/solvents. Brushes used to apply CARC should be dry and free of thinner residue. Disposal of used thinner and other cleaning solvents should per chapter 2 of this SOP and BO 6280.2.

3005. WELDING PROCEDURES. Units authorized intermediate maintenance may periodically have a requirement for the welding or cutting of a CARC painted surface. Guidelines for this procedure are set forth in reference (a). Failure to remove CARC paint from at least four inches around the anticipated weld/cut may result in toxic poisoning. CARC must be removed from both sides of a cut/weld. Application of epoxy primer MIL-P-53030 or MIL-P-85582 and the single component PUP MIL-C-53039 will be per reference (a). Reapplication should be limited to the area involved in the cut/weld. The one quart/day/vehicle/individual rule applies.

3006. RECORD KEEPING. Items painted with CARC will have the NAVMC 696 Equipment Record Folder annotated in the Remarks Section with the following statement; "Painted With CARC" and the date. If an equipment record folder does not show an item was previously painted with CARC, the following field expedient methods will be used to identify a CARC surface.

1. Wet a rag thoroughly with acetone (methyl ketone) or nail polish remover.
2. Briskly rub the surface with the rag for twenty seconds.
3. Evidence of paint removal from the painted surface onto the rag indicates a non-CARC surface.

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APPENDIX A

FIRST AID/EMERGENCY PROCEDURES

1. Contamination of the Eyes. Flush with clean, lukewarm water for a minimum of 15 minutes, lifting the eyelid occasionally. Obtain medical attention.
2. Contamination of the Skin
 - a. Remove the contaminated clothing immediately.
 - b. Wash the effected area with soap and water.
3. Contaminated by Inhalation
 - a. Remove the affected individual to an uncontaminated fume-free area.
 - b. Give oxygen or artificial respiration as needed
 - c. Obtain medical attention immediately.
4. Contamination by Ingestion/Swallowing. Obtain immediate medical attention.

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APPENDIX B

MEDICAL EVALUATION

1. Preplacement Evaluation. Prior to assignment to a position involving exposure to isocyanates, the following medical evaluation shall be performed on each worker.

a. A medical history with particular emphasis on the presence and degree of respiratory symptoms, e.g., dyspnea, cough, sputum production, wheezing and tightness in the chest. A smoking history should also be elicited.

b. A comprehensive occupational history detailing prior exposure to any toxic gases, dusts, fumes or chemical, particularly isocyanates. Symptoms related to such exposures must be recorded.

c. A physical examination with particular attention to the lungs and skin

d. A 14-inch by 17-inch posterior-anterior chest roentgenogram and baseline spirometry including forced vital capacity (FVC) and forced expiratory volume in one second (FEV1). Personnel unfamiliar with spirometry should consult appropriate medical references to facilitate proper techniques and interpretation. A white blood cell count with differential shall be performed. An absolute eosinophil count is recommended, but not required.

e. An evaluation of the worker's ability to wear a respirator.

f. All workers should be informed of the hazards and symptoms related to isocyanate exposure, particularly nocturnal dyspnea or nocturnal cough.

g. Those workers with lung disorders, particularly chronic obstructive pulmonary disease (asthma, emphysema, chronic bronchitis) and who exhibit significant ventilatory impairment, e. g., FEV1/FVC less than 45% or FVC less than 50% of predicted, shall be disqualified for work with isocyanates.

h. Atopic individuals (history of asthma, hay fever or eczema) are probably at no greater risk of becoming sensitized to isocyanates than non-atopics. However, a definite history of isocyanates sensitivity is considered disqualifying.

2. Request for Medical Evaluation Surveillance. The format shown on the following page should be utilized to request medical evaluation/surveillance.

SOP FOR CARC

UNIT HEADING

4750
SAFETY
DATE

From: Commanding Officer, _____ Battalion
To: Commanding Officer, U. S. Naval Hospital, Okinawa
(Industrial Hygiene Branch/Environmental Health Section)
(1) Commanding Officer, _____ Regiment (Ground
SafetyO)
(2) Commanding General, 3d Marine Division (AC/S G-4 SafetyO)

Subj: REQUEST FOR MEDICAL EVALUATION/SURVEILLANCE

- (a) TM 4750-15/1
- (b) OPNAVINST 5100.23B
- (c) DivO P5100.2A

- 1) Occupational Exposure Registry
- 2) Request for Medical Clearance for Respirator use
Questionnaire.

1. Per references (a) through (c), evaluation of the personnel listed in enclosure (1) is requested for medical evaluation/surveillance for exposure to Chemical Agent Resistant Coating (CARC). Additionally, the personnel listed in enclosure (1) will be assigned to this unit's Respirator Protection Program (RPP). A copy of enclosure (2) has been completed for each individual requiring clearance.

2. This command understands that it is not to assign any personnel to duties requiring respirator use until medical clearance for RPP is completed and RPP assigned personnel are issued a complete Medical Surveillance Program Qualification and Certification Status Card (USNH OKI 6260/03-88).

3. Point of contact this unit is
extensions _____.

I. M. MARINE
Bv direction

SOP FOR CARC

OCCUPATIONAL EXPOSURE REGISTRY

Command: _____

Shop/Work Center: _____

Location: _____

Documented Exposure: HEXAMETHYLENE DIISOCYANATE (HMDI) FROM CARC PAINT SYSTEM

Programs Assigned: CARC PAINTER/RPP

Date of Initial Roster: _____

Dates Revised: _____

RANK NAME (Last, First, M.I.) SSN BIRTH DATE ROTATION DATE

SOP FOR CARC

APPENDIX C

PERSONAL PROTECTION EQUIPMENT

1. The following is a list of some of the personal protection equipment (PPE) available at DSSC MCB Camp Butler. Units are responsible for requisitioning sufficient PPE to meet safety standards set forth in Chapter 2 of this SOP (NSN's subject to change):

<u>Item</u>	<u>NSN</u>	<u>Cost</u>
Apron, clear vinyl	8415-00-899-3026	\$ 1.71 ea
Coveralls, Protective Paper (LG)	8415-01-092-7531	\$ 2.80 ea
Coveralls, Protective Paper (X-LG)	8415-01-092-7532	\$ 2.80 ea
Crema, skin protective	6850-00-244-4893	\$ 2.26 lb
Boots, rubber black	8430-00-262-8255	\$20.80 pr
Gloves, chemical	8415-00-266-8677	\$ 4.40 pr
Respirator kit, air filtering organic vapors, replaceable cartridge-type (with mist pre-filters)	4240-00-022-2524	\$16.18 kt
Faceshields, industrial tilting	4240-00-542-2048	\$ 6.18 ea
Goggles, ventilated rigid	4240-00-203-3810	\$ 1.63 pr
Drop cloth	8340-00-068-7908	\$ 1.40 ea

Note: The eye wash station available at DSSC, MCB Camp Butler NSN 4230-01-056-3034 Eyewash Portable 16 oz. DOES NOT meet requirements for chemical-splash hazard areas (i.e. painting areas, degreasing stations, battery charging areas).

SOP FOR CARC

Open Purchase Address:

Direct Safety Company
7815 South 46th St
Phoenix, AZ 85044

Open Purchase Justification: "USMC TM 4750-15/1: A new NBC resistant camouflage paint is now being used throughout the Marine Corps called CARC paint. CARC paint is very hazardous because of a component called HEXAMETHYLENE DIISOCYANATE (HDI, HMDI) which can evoke an allergic response, and once sensitized, a subsequent exposure to even a trace amount of HDI, HMDI may cause an asthmatic-like reaction. It is so dangerous that a painter can only use one quart a day. For this reason the CARC painting sites will not receive certification to paint until all of the safety equipment necessary for the handling of CARC paint is on hand."

3. The following safety items related to HM/HW spill/leakage are available at DSSC, MCB Camp Butler:

<u>Item</u>	<u>NSN</u>	
Ammonium Hydroxide (5-10% detergent/5-10% ammonia/water)	6810-00-527-2476	\$.51 qt
Absorbent	7930-00-269-1272	\$ 2.86 bag

SOP FOR CARC

APPENDIX D

PROCEDURES FOR CARC PAINTING SITE CERTIFICATION

HEADING

4750
S-4/SAFETY
Date

From: Commanding Officer, _____ Battalion
To: Commanding Officer, U.S. Naval Hospital Okinawa
(Industrial Hygiene Branch)
Via: (1) Commanding Officer, _____ Regiment
(2) Commanding General, 3d Marine Division (AC/S
G-4/Safety Officer)
Subj: REQUEST FOR CERTIFICATION OF TOUCH-UP SPOT PAINTING
FACILITIES FOR USE OF CARC PAINT
Ref: (a) TM 4750-15/1
(b) DivO P5100.2A
Encl: (1) Sketch of Spot Painting Site
(2) List of Required Safety Equipment on Hand
(3) List of Personnel Medically Qualified to Apply
CARC (Form USNH Oki 6260/2)
(4) List of Hazardous Waste/Hazardous Material
Spill/Leakage Safety Containment and Clean-up
Equipment on Hand
1. Per references (a) and (b), an inspection of our proposed site is
requested for the purpose of granting certification for spot painting
with CARC paint. Enclosure (1) through (4) are provided for your
review.
2. Point of contact this unit is Rank/Name, (Safety Officer)
phone number.

I. M. Marine
By direction

SOP FOR CRSP

APPENDIX F

HAZARDOUS WASTE CONTAINER LABEL

_____ Marine Corps Bases

Camp Smedley D. Butler

HAZARDOUS WASTE CONTAINER LABEL

Container No:

Department/Tenant Activity: _____

Building Number: _____ Shop Number:

Pickup Date:

Waste Information:

Type: _____

Source: _____

Quantity: _____

Concentration: _____

Other Remarks: _____

Signature of

Waste Originator: _____ Date:

Telephone Number: _____

SOP FOR CARC

APPENDIX G

INSTRUCTION FOR DD FORM 1348-1

The Generating Activity Will Include:

1. NSN — Blocks 8 thru 20.
2. UNIT OF ISSUE — Blocks 23 & 24.
3. QUANTITY — Use 5 digits in Blocks 25 thru 29.
4. SERVICES — Use appropriate code.
5. REQUISITIONER — Generating Activity's RUC in Blocks 31 thru 35.
6. DATE — Use Julian Date in Blocks 36 thru 39.
7. SERIAL — Use "Unit Serial Number" in Blocks 40 thru 43.
8. DISPOSAL AUTHORITY CODE — M, N, R in Block 64.
M — Message from higher HQ.
N — Local, CO, OIC, NCOIC authority.
R — Message to higher HQ, then higher HQ direction provided for disposal.
9. DEMIL CODE in Block 65.
For DEMIL codes, check microfiche ML-C (Consolidated Management Data list) or ML (Management Data list). For local stock numbers and items, if the items are not ammunition, explosives, or other dangerous items, then the DEMIL code is A.
10. RECLAMATION CODE in Block 66; N=NO. The codes are:
N — Nothing needs to be reclaimed from property.
R — Items need to be reclaimed from property but is not accomplished.
Y — Items have been reclaimed.
11. SUPPLY CONDITION in Block 71.
12. DOLLARS — Enter in Blocks 74 thru 80; estimate if unknown.
13. BLOCK A — Generating Activity RUC, Unit Name, Bldg No.
14. BLOCK B — As shown in example.
15. BLOCK C — H/M for hazardous material; H/W for hazardous waste.
16. BLOCK F — Generating Activity POC & Telephone No.
17. BLOCK U — Use DOT Proper Shipping Name and Hazard Class. (Check Refs (a)-(d) if unknown).
18. BLOCK V — May be used as continuation of Block U.
19. BLOCK W — Explanation of contents.
20. BLOCK X — Item nomenclature.
21. BLOCK Y — Use when substitute (non-original) container is used (See Example). Specific for HM.

SOP FOR CARC

22. SHIPPERS USE

BLOCK 2 — Type of container(s).

BLOCK 5 — Number on container(s).

BLOCK AA — Any important Remarks pertaining to this shipment.

BLOCK DD thru GG — Shown on example and specific for HW only.

BLOCK 11 — Shown on example.

BLOCK 15 — Generating Activity OIC or NCOIC Signature and typed name, rank, and date.

Note: For further information on turn-in procedures for specific HM/HN, contact the DRMO Receiving Chief at extension 637-1037 or the Base Environmental Engineer at extension 645-7587.